National Weather Service Hydrologic Activities along the Gulf of Mexico

The National Weather Service (NWS) is responsible for providing river forecasts to mitigate the loss of life and property. These forecasts are also used to support the nation's economy. These responsibilities are part of the larger NWS mission to provide meteorological support, forecasts, and warnings for the country.

To accomplish these missions, the NWS operates a two-tiered hydrologic services program. 122 NWS Weather Forecast Offices (WFO) are responsible for data collection, the issuance of forecasts and warnings to the public and media, and the interface with the NWS hydrologic partners and customers. Of the 122 WFOs, about 80 have a dedicated position, the Service Hydrologist, to manage the program across the country. To support the WFOs, 13 River Forecast Centers (RFCs) serve as hydrologic modeling centers to prepare forecasts and other hydrologic information for dissemination to the WFOs. RFCs are staffed with 10-20 Hydrologists with expertise in hydrologic modeling. The staffing is dependent on the size of the area of responsibility. Across the US, the NWS provides 5-day stage forecasts at over 4000 locations. With RFC support, the WFOs provide short-fused warnings of flash floods. WFOs serve as the primary interface with local officials and public.

Along the Gulf of Mexico, nine (9) WFOs have hydrologic service responsibility. Three (3) RFCs provide modeling support as indicated by Figure 1. Figure 1 also shows the locations in the coastal states where the NWS prepares river forecasts.

To accomplish their mission, the RFCs run hydrologic models that simulate soil moisture and determine the amount of runoff expected from observed and forecasted rainfall. For most locations, simple hydrologic techniques are used to track flood waters from the headwaters downstream to the Gulf. For complex situations including tides and storm surge, RFCs are developing enhanced hydraulic modeling techniques to solve the equations of momentum and energy to predict water levels. Because of the complexity of models and time involved, RFCs have developed these enhanced techniques at only a very few locations.

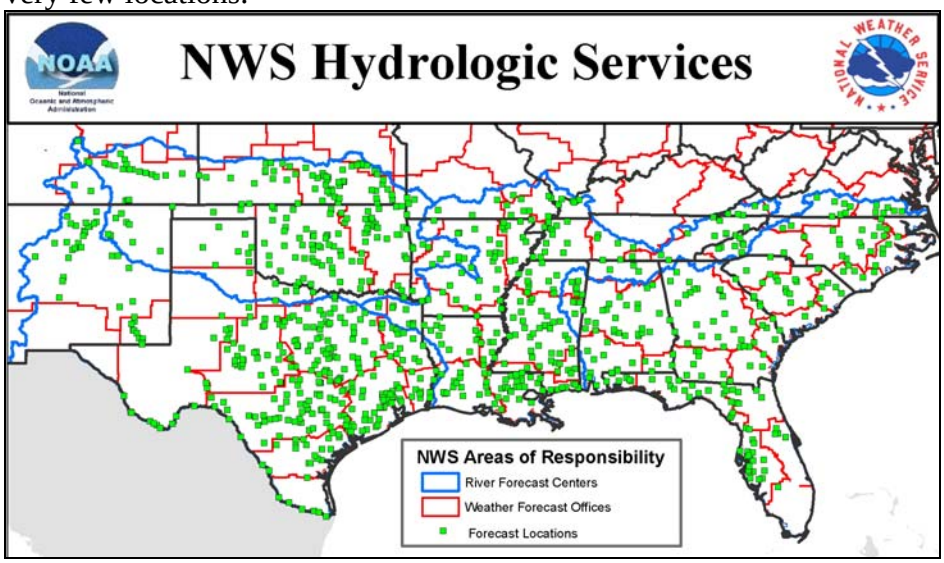

Figure 1 NWS Hydrologic Areas of Responsibility

NWS Hydrologic Services
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